Computational Physics

University of Edinburgh

Venues

King's Buildings Campus

Content

Year 1:
You will study two core courses: Physics 1A: Foundations and Physics and Physics 1B: Stuff of the Universe. Physics 1A is innovative in its use of technology and offers an interactive learning experience. Physics 1B introduces you to the fundamentals of quantum physics. You will also be able to choose two courses from other academic areas and will complete a selection of mathematics courses.

Year 2:
You will study modern physics and physics of fields and matter. Supporting mathematics courses will cover algebra, calculus, dynamics and vector calculus and you will be introduced to practical physics, including programming, data analysis and experimental techniques. Students taking direct entry to second year will take additional introductory courses in classical physics and mathematics. Those studying computational physics will be offered a course in computer simulation. Those studying mathematical physics will be offered specialist mathematics courses. Most students will have the freedom to choose one or two courses from other academic areas.

Year 3:
You will study thermodynamics, statistical mechanics, electromagnetism, optics and quantum mechanics. We offer a supporting mathematics course covering Fourier analysis, probability and statistics, a computing course on numerical algorithms, and an introductory course to research methods. Physics students will have access to an experimental laboratory, and astrophysics students will be introduced to practical astronomy. Computational physics students take further computing courses, and theoretical and mathematical physics students take further mathematics courses.

Year 4:
In this year there are two final core courses covering relativity, nuclear and particle physics, and condensed matter physics. Astrophysics students take core courses in astrophysics and cosmology.
Apart from this there is a choice of options ranging from atmospheric dynamics to macromolecular physics to general relativity. You will also take part in project work.

Year 5:
For MPhys students, your final year is largely devoted to a research project chosen from a wide range of topics. You will also complete a number of advanced-level courses.

Start Date

September

Qualification

Degree

Study Method

Full time

Award Title

MPhys

UCAS Code

F355

Course Length

5 years

Faculty

College of Science and Engineering

Department

Physics and Astronomy

Entry Requirements

2027 entry requirements

Standard entry:
4 Highers at AAAA (by end of S5 preferred) including Maths and Physics plus English at National 5. Advanced Higher Maths is recommended.

Direct entry to year 2 is possible with above plus 3 Advanced Highers at AAA including Maths and Physics.

Widening access entry:
4 Highers at AABB (two sittings) including Maths at A and Physics plus English at National 5. Advanced Higher Maths is recommended. Highers at BBB must be achieved in one sitting.

SCQF Level

11

Progression Routes

«ProgressionRoutes»

Combination Courses

«htmlCombinationCourse» «htmlCombinationUCASCode»

Address

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Website

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